Silicon NPN Power Transistors BD743/A/B/C

DESCRIPTION

- With TO-220C package
- Complement to type BD744/A/B/C
- High current capability
- High power dissipation

APPLICATIONS

- For use in power linear and switching applications

PINNING

PIN	DESCRIPTION
1	Base
2	Collector;connected to mounting base
3	Emitter

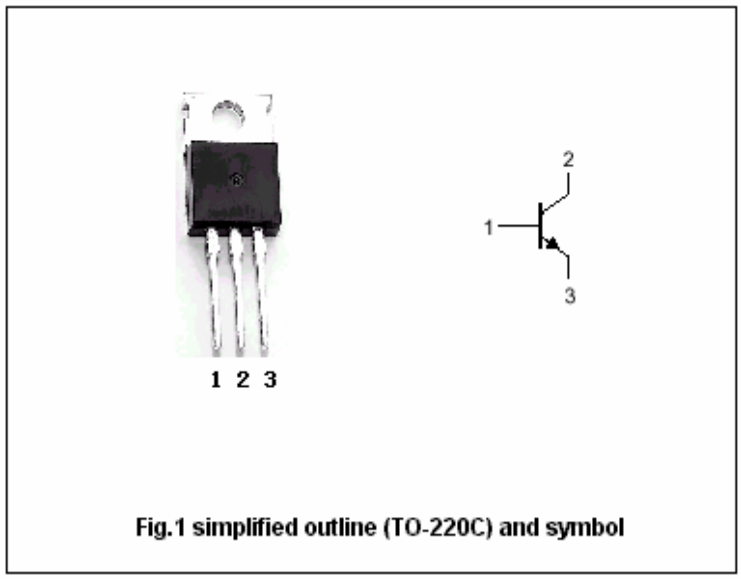

Fig.1 simplified outline (TO-220C) and symbol

Absolute maximum ratings (Ta=25℃)

SYMBOL	PARAMETER		CONDITIONS	VALUE	UNIT
V_{CBO}	Collector-base voltage	BD743	Open emitter	50	V
		BD743A		70	
		BD743B		90	
		BD743C		110	
V_{CEO}	Collector-emitter voltage	BD743	Open base	45	V
		BD743A		60	
		BD743B		80	
		BD743C		100	
V_{EBO}	Emitter-base voltage		Open collector	5	V
I_C	Collector current			15	A
I_{CM}	Collector current-peak			20	A
I_B	Base current			5	A
P_C	Collector power dissipation		T_C=25℃	90	W
			T_a=25℃	2	
T_j	Junction temperature			150	℃
T_{stg}	Storage temperature			-65~150	℃

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CHARACTERISTICS

Tj=25℃ unless otherwise specified

SYMBOL	PARAMETER		CONDITIONS	MIN	TYP.	MAX	UNIT
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	BD743	I_C=30mA; I_B=0	45			V
		BD743A		60			
		BD743B		80			
		BD743C		100			
$V_{CEsat-1}$	Collector-emitter saturation voltage		I_C=5 A;I_B=0.5 A			1.0	V
$V_{CEsat-2}$	Collector-emitter saturation voltage		I_C=15 A;I_B=5 A			3.0	V
$V_{BE\ -1}$	Base-emitter on voltage		I_C=5A ; V_{CE}=4V			1.0	V
$V_{BE\ -2}$	Base-emitter on voltage		I_C=15A ; V_{CE}=4V			3.0	V
I_{CEO}	Collector cut-off current	BD743/A	V_{CE}=30V; I_B=0			0.1	mA
		BD743B/C	V_{CE}=60V; I_B=0				
I_{CBO}	Collector cut-off current	BD743	V_{CE}=50V; V_{BE}=0 T_C=125℃			0.1 5.0	mA
		BD743A	V_{CE}=70V; V_{BE}=0 T_C=125℃			0.1 5.0	
		BD743B	V_{CE}=90V; V_{BE}=0 T_C=125℃			0.1 5.0	
		BD743C	V_{CE}=110V; V_{BE}=0 T_C=125℃			0.1 5.0	
I_{EBO}	Emitter cut-off current		V_{EB}=5V; I_C=0			0.5	mA
h_{FE-1}	DC current gain		I_C=1A ; V_{CE}=4V	40			
h_{FE-2}	DC current gain		I_C=5A ; V_{CE}=4V	20		150	
h_{FE-3}	DC current gain		I_C=15A ; V_{CE}=4V	5			

Switching times resistive load

t_d	Delay time	I_C=5 A;I_{B1}=-I_{B2}=0.5 A $V_{BE(off)}$=-4.2V; R_L=6Ω t_p=20μs		0.02		μs
t_r	Rise time			0.35		μs
t_s	Storage time			0.5		μs
t_f	Fall time			0.4		μs

THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	MAX	UNIT
$R_{th\ j\text{-}c}$	Thermal resistance junction to case	1.40	℃/W

PACKAGE OUTLINE

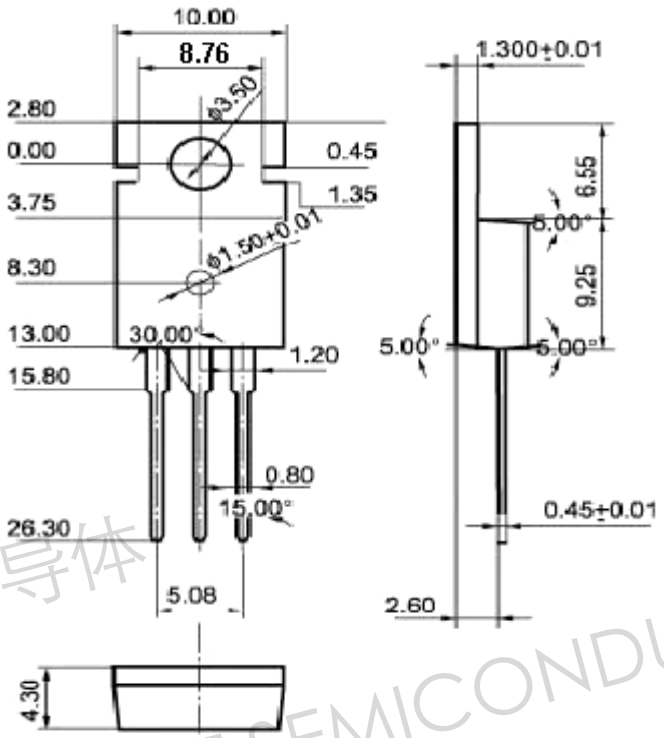

Fig.2 Outline dimensions (unindicated tolerance:±0.10 mm)